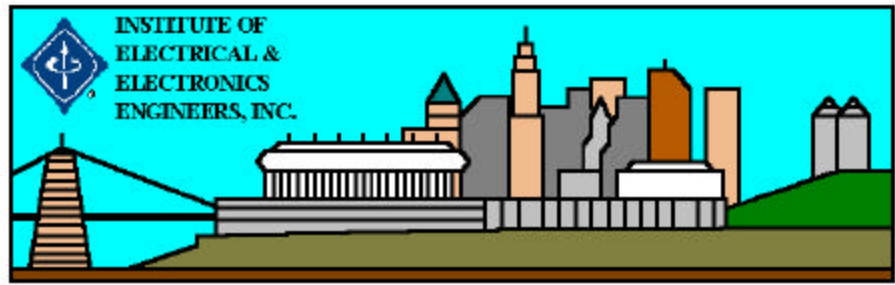


**IEEE CINCINNATI
SECTION
NEWSLETTER
JANUARY 2002**



JANUARY MEETING

THE SPACE ENVIRONMENT, SPACE WEATHER STORMS, AND EFFECTS ON TECHNOLOGY

DATE: Thursday, January 24, 2002

PLACE : Raffles – 10160 Reading Road (see below for directions)

TIME : 5:30 p.m. to 7:00 p.m. - Social Time/Dinner
7:00 p.m. to 8:30 p.m. - Program

COST FOR DINNER: \$15.00 which includes a buffet dinner, soft drinks/coffee, tax & gratuity.
Cost for student members - \$10.00

MENU SELECTIONS: Maryland Crab Cakes, Center Cut Chops with Baked Apples, Country Fried Chicken, Broccoli & Carrot Casserole, Buttered Corn, Whipped Potatoes with Gravy, Tossed Salad with Dressings, Rolls & Butter, Apple Dumplings, Coffee, Tea Iced Tea, Soft Drinks. There is also a bar available for the purchase of alcoholic drinks. It is located at 10160 Reading Road, south of Glendale-Milford Road on the east side of Reading. Take I-75 to the Glendale-Milford Rd. Exit, go east on Glendale-Milford Road approximately 3/4 of a mile to Reading Rd. and turn right on Reading.

Please call the Cincinnati Section Voice Mailbox at 513-629-9380, by **Noon, Tuesday, January 22, 2002** if you plan to attend. Please leave your **Name, IEEE Member Number, and a daytime telephone number.**

ABOUT THE MEETING: A single space weather storm can release more energy than man has produced in our entire history on earth. In the process, such a storm can damage the technology we rely on-sometimes at a cost of millions of dollars in manpower and material just to "clean up the mess." This talk will focus on such storms, the basic science of the space environment that produces them, and how they affect our daily lives.

ABOUT THE PRESENTER: Our Presenter, Devin J. Della-Rose, Major USAF, has been in the Air Force's Air Weather Service for 15 years, and 13 of those years have been spent studying the space environment and space weather storms. From 1987-1990 he served at Peterson AFB (Colorado Springs, CO) and Cheyenne Mountain as staff weather officer to Air Force Space Command, U.S. Space Command, and the North American Aerospace Defense Command (NORAD). He obtained his M.S. degree in space physics from Utah State University (1992). In his follow-on assignment he worked at the Air Force Space Forecast Center (Colorado Springs again) as a space weather forecaster and science division officer. He returned to Utah State and obtained a PhD in space physics in 1999. He now teaches space science and advise master's level research for students at the Air Force Institute of Technology.

CHAIR'S MESSAGE

by Tom Grau, Section Chair

By now the last strains of Auld Lang Syne have long since faded, the party noise makers have ceased and it's now time to look forward to a new year: Welcome to the second year of the Twenty First Century.

In this responsibility as Chair of the Cincinnati Section, I would like again to pledge my support to you and to your Section. The Section's Mission is to serve the membership of this Section and to support the Societies that our membership belongs to. My Vision for our Section is that we enrich our member skills through program presentations of current technology.

The December Meeting, held at the Verdin Bell Company, enjoyed a good turn-out in addition to good food. We browsed through the Verdin Bell Museum and then enjoyed an excellent dinner catered by the Bell Event Centre and hosted by Paul Goebel. Following dinner, we traveled to the Verdin Bell Manufacturing site on Eastern Avenue where David Verdin treated us to an outstanding tour of their facilities. On behalf of the Cincinnati Section, I wish to thank Paul Goebel and David Verdin for their gracious presentations.

TO SUBSCRIBE TO THE ELECTRONIC NEWSLETTER

This newsletter is only available via e-mail or the Section's web page at <http://ieee.cincinnati.fuse.net/> with the exception of new Section members (one issue only) or members who have specifically requested a copy be delivered through the U. S. Mail.

If you are a new Section member and would like to get this newsletter electronically, please contact Bob Morrison (Editor) at **513-287-3697** or by e-mail at j.r.morrison@ieee.org. Provide your name and member number. In case there are questions, please include a daytime telephone number as well.

If you would like the "Snail Mail" version, you must contact Bob Morrison via the above means or call the Cincinnati office at **513-639-8389**.

NEW MEMBERS

The following individuals are IEEE members who are new to our Section:

JAMES A. BOKENO	HEATHER M. HISLE	BRIAN T. PELLEGRINO
J. BONAR	R. E. HOCK	KRISHNAN PREMANAND
MANUEL CARR	ED HOFFER	MASSOUD RABIEE
SWAPNAJIT CHAKRAVARTY	DOMENIC A. IONIRO	RYAN N. RAMER
CORY J. CLAXTON	ROBERT A. KEMERLING	DHANANJAI M. RAO
ANDREW R. COLE	TIFFANY A. KIZER	SEAN A. RICHMOND
SARAH COPPOCK	RON LASK	TIMOTHY J. ROBINSON
SVARIT DAVE	REGINA A. LINDSAY	MATTHEW D. SANTORO
ERIC. M. DIEHL	PAUL J. MAJEWSKI	WENDY E. SHILLMAN
ADAM D. DISALVO	ANINDYA MAJUMDER	ORACHAT SUKMARG
CHRISTOPHER A. DLUGOLINSKI	CHRIS R. MCDANIEL	DAVID G. TASHJIAN
ROBERT A. EADES	CHRISTOPHER S. MCLENNAN	JUN WANG
MICHAEL D. FILSINGER	JODY A. MCNANIE	DARIUS E. WHATLEY

JAMES V. GUENES
KEVIN E. HENRY
MATTHEW B. HIRSCH

BRIAN MORGAN
ALEX OLIYNYK
MICHAEL E. PASSEROTTI

KYLE A. WILSON
MATHIAS WOTTENG, JR.

We wish to extend our welcome to all of our Section's new members!!!

2001 Cincinnati Section Election Results

Congratulations to Mark Strong on being re-elected as the Cincinnati Section Member-At-Large.

ATTENTION Retired Engineers and Scientists! Consider RESC Activities !

The **Retired Engineers and Scientists of Cincinnati - RESC** for short - invite those with **technical back- grounds** who are **retired** and would like to **share good fellowship** while **pursuing interests** in technology, community, history and nostalgia, travel, and business or industry developments.

Activities include monthly **luncheon meetings**, periodic **plant tours**, and **golf** in season. Luncheon meetings are held on the third Tuesday of each month from October through May.

Visit website <http://RESC-online.org> for the "big picture" of RESC

RESERVATIONS REQUIRED FOR ALL EVENTS - Contact **Gene Anderson**, phone **(513) 353-2708**

LUNCHEON MEETING SCHEDULE -

JANUARY LUNCHEON MEETING

Tuesday, January 15

11:30 AM

Canada - Our Northern Neighbor

Russell Knowling, Lecturer, UC Institute of Learning in Retirement, who has studied and taught in Australia, England, Canada, and the USA will lead us westward across Canada from Newfoundland to British Columbia with not just tourist features but the history, geography, and philosophy which distinguish the Provinces, and prepare you for personal exploration.

Tuesday, February 19

11:30 AM

Manned Mission To Mars

Lyle Kelly & Janis Jaunberg of the Mars Society, a P&G (Information Technology) retiree and a UC chemistry doctorate candidate/science fiction author will team in an illustrated presentation to bring us facts about Mars, why and how humans might go to Mars, and discuss projects toward that goal that are in progress

Tuesday, March 19

11:30 AM

Restoring a Frozen "My Gal Sal" B-17 Bomber

Bill Beringhaus, RESC member, retired Principal Electrical Engineer, CG&E, who piloted a B-17 on 35 WW2 missions over Europe, will describe the efforts of a local team to restore a crashed B-17 after its 56 years in the icy waters of Greenland, for its use as a memorial.

Tuesday, April 16
11:30 AM

South American Odyssey

Art & Ruth Kupferle, the husband/wife team of a retired Bell System Engineer (past Pres. of RESC) and a retired Cincinnati school teacher, who have addressed RESC previously about their visits to many parts of the globe will describe the places, people, and history of the larger South American countries

Tuesday, May 21
CENTRAL
11:30 AM

88 Bells for Ohio Bicentennial (NOTE: AT QUALITY

HOTEL, NORWOOD) James Verdin, President, Verdin Bell Co. will describe how between now and 2003 his company will cast on location, by use of a unique mobile foundry in each of the 88 counties, a 230 pound bell bearing the name of the county, the casting date, the Great Seal of Ohio, and the Bicentennial logo.

PLANT TOUR SCHEDULE

Tours are limited to RESC Members and Member sponsored Guests

Tuesday, March 26 **MILACRON - PLASTIC TECHNOLOGIES GROUP**, Batavia, Ohio
Tuesday, April 23 **MAZAK (Manufacturer of Machining Centers)**, Florence, Kentucky
Thursday, May 16 **TOYOTA AUTO ASSEMBLY PLANT**, Georgetown, Kentucky

General information about RESC and supplemental information about events
is available on website: <http://RESC-online.org>

Scanning the Past: A History of Electrical Engineering from the Past

Submitted by Dick Reiman, Historian

Copyright 1993 IEEE. Reprinted with permission from the IEEE publication, "Scanning the Past" which covers a reprint of an article appearing in the Proceedings of the IEEE Vol. 80, No. 8, August 1992

Guglielmo Marconi

Seventy years ago this month the PROCEEDINGS featured a paper on radio telegraphy by Guglielmo Marconi. He had presented the paper at a June 1922 meeting when he was awarded the Medal of Honor of the Institute of Radio Engineers in recognition of his pioneering contributions to radio communication.

In his paper Marconi called attention to what he termed a "somewhat neglected branch of art," namely the investigation of very short electromagnetic waves. He recalled that his first experiments with wireless communication in 1895-1896 had been with waves only a few inches in length. However, he continued, the rapid development of long-wave communication systems by himself and others had diverted attention from short waves for many years.

Assisted by C. S. Franklin, Marconi had resumed shortwave experiments during 1916-1917, achieving a range of about 30 km at a wavelength of about 3 m. Using a vacuum-tube transmitter and a wavelength of 15 m, he and Franklin established in 1919 a voice-radio link between London, England, and a station more than 150 km away. In his 1922 paper, Marconi mentioned that they had noticed the effect of reflections of short-wave signals by large metallic objects

located a considerable distance from their transmitter. He suggested that it should be possible to develop a short-wave apparatus to install on ships which would provide warnings of the presence of other ships in conditions of poor visibility.

Marconi was born in 1874 in Bologna, Italy, the son of an Italian merchant and a Scotch-Irish mother. In 1894 he learned of Hertzian waves from Augusto Righi, a professor at the University of Bologna. Convinced that such waves could be used for wireless communication, Marconi conducted preliminary experiments in Italy using a spark-gap source and a coherer detector. Encouraged by his mother, in 1896 he went to England, where he demonstrated his wireless system to officials of the British Post Office and received a patent in July 1897.

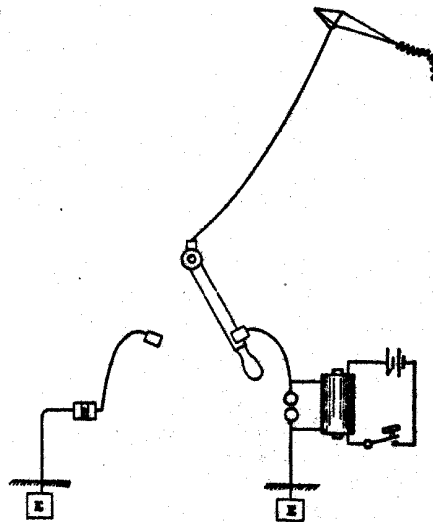


Figure 1. Marconi transmitting and receiving circuits with antenna "sustained by a kite." (From George W. Pierce, *Principles of Wireless Telegraphy*. New York: McGraw-Hill, 1910.)

With financial support from his mothers' relatives, Marconi organized the Wireless Telegraph and Signal Company in 1897 to develop his system commercially. Moving to longer waves and higher power transmitters, he was able to communicate at a distance of about 30 km by July 1898. In April 1900 he received his famous "four sevens" patent (British patent 7777), which covered resonance tuning of the transmitter and receiver to enhance selectivity.

In December 1901 signals from a high-power Marconi transmitter located at Poldu in Cornwall, England, were reported to have been received by a receiving station near St. Johns in Newfoundland. The receiving antenna consisted of a 400-ft-long copper wire supported by a kite, and the detector was an Italian Navy coherer consisting of a globule of mercury between iron terminals and connected to a telephone receiver. In January 1903 a Marconi station at Cape Cod, Massachusetts, sent a short message from President Theodore Roosevelt to King Edward VII in England. Marconi received a Nobel prize in 1909 for his development of wireless communication.

The January 1928 issue of the PROCEEDINGS included another paper by Marconi reporting on developments in short-wave communication achieved since 1922. Many of his experiments had employed receiving equipment on his yacht *Elettra*. He stated that communication had been possible for 23.5 hours out of 24 from England to Australia by the fall of 1924. He claimed that a long-wave station in England with a power of 500 kW had been less effective in communicating with Australia than a short-wave transmitter at 20 kW. He anticipated that short waves would prove especially useful for radio facsimile and television.

Marconi resumed microwave experiments in 1931 using wavelengths of around 50 cm. He installed a microwave link between the Vatican and the summer home of Pope Pius XI, a distance of about 25 km, in February 1933. Marconi died of a heart attack in July 1937.

*James E. Brittain
School of History, Technology, and Society
Georgia Institute of Technology*

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ELECTRICAL WORLD MAGAZINE

125th ANNIVERSARY

by Bob Morrison, Editor

In 1999, Electrical World Magazine celebrated their 125th anniversary as one of the premier publications for the Electric Power Industry. They presented a history of significant People, Companies, Industry Changes and Innovative Technologies which have served to define the current status of the Electric Power Industry. In the next few months, their article will be reprinted in this newsletter (*permission granted by McGraw-Hill Publishing Co.*)

PEOPLE

WERNER VON SIEMENS (1816-1892)

With his invention of the electric dynamo, this son of a Prussian tenant farmer secured his place in industrial history and catapulted his family into nobility. Werner von Siemens's dynamo, which converted mechanical energy into electricity, was the first significant development in the field of electrical engineering and electric power generation.

During his lifetime, von Siemens gained fame as the world's first global entrepreneur. From childhood, von Siemens had dreams of an international empire. The company that von Siemens and partner Johann Halske founded in 1848 brought his dream to fruition. Siemens and Halske Telegraph

Construction Co was responsible for laying the majority of the telegraph cable that linked remote edges of the globe for the first time, including a 6000-mile cable across Russia and the first trans-Atlantic cable.



GEORG OHM (1787-1854)

During the first half of the nineteenth century, Germany was a hotbed of industrial development. It was within this dynamic environment that Georg Ohm, son of a prominent engineer, formulated the fundamental principle of electromagnetism. Ohm's Law shows the direct proportionality between current and voltage.

Though the $V=IR$ relationship does not always hold, especially when the resistive material is a superconductor, Ohm's Law is still one of the building blocks of electric power.



PHILLIP SPORN (1896-1978)

"If we are skilled enough, we can invent the future . . . What I am saying is that we can create the future -- but we cannot predict it" -- Phillip Sporn, former chairman, American Electric Power Co.

Always with an eye toward progress, in his 47 years with AEP, Sporn revolutionized the concept of the electric utility. He drove the industry forward with his new theories about high-voltage transmission that enabled electricity to be transmitted over great distances with less power loss. He also promoted the interconnection of the nation's utility grids, and the advancement of nuclear power.



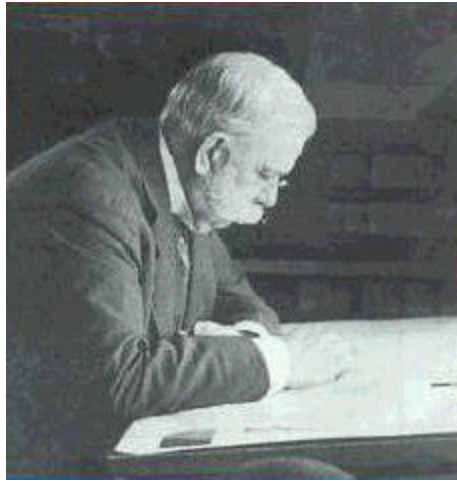
At the time of his death, Sporn had become the second most decorated pioneer in electric power generation -- second only to Edison. Sporn got his start in the industry turning on lower Manhattan's gas streetlights. After receiving an electrical engineering degree from Columbia University, Sporn joined the utility industry, where his contributions live on.

CHAUNCEY STARR (1910-)

A champion of nuclear power, Chauncey Starr, the founder of the Electric Power Research Institute in Palo Alto, Calif, has perhaps the best perspective on atomic power. One of the few surviving engineers who worked on the Manhattan Project -- the experiments that demonstrated the capabilities of nuclear fission to the world -- Starr played an important role in the commercial development of the technology. After the war, Starr became one of the chief proponents of the peaceful use of nuclear power as an energy source, touting its efficiency and environmental benefits to a doubtful audience. In 1973, with the blessings of the government and industry leaders, Starr established EPRI, which he conceived to be "a world-class research institute for utilities." The establishment of EPRI once again gave the industry a central R&D lab. Electric power, which had been hatched in Edison's famed research institutions, would grow in a new incubator called EPRI.

GEORGE WESTINGHOUSE (1846-1914)

With uncanny foresight, George Westinghouse rebuked Edison's idea of using direct current to distribute electricity. As an alternative, he championed the use of alternating current, claiming it was better-suited to transmit power over long distances. An American Civil War veteran, Westinghouse gained fame as the inventor of the air brake that transformed the railroad industry by allowing trains to travel faster and farther. Using the profits from the Westinghouse Air Brake Co and the economic boom that followed the birth of the electrical age, Westinghouse was able to underbid his competitors and garner the chance to use Nikola Tesla's ac system to distribute power from the Niagara Falls power station to Buffalo, NY, in 1895. The success of that system in transporting power over a great distance demonstrated the viability of ac technology. That early demonstration was a pivotal point in the development of the industry, establishing ac as the standard which is still in use today.



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If you are interested in placing an ad, or if you have questions, please contact:

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IEEE NEWS

U.S. IEEE MEMBERS ELECT PRESIDENT, 2003; MEMBER-AT-LARGE, 2002-2003

The results of the 2001 IEEE annual election are in, and a new IEEE-USA President has been chosen. James V. Leonard becomes the sixth IEEE-USA President directly elected by the IEEE's U.S. members, to follow 2002 President LeEarl A. Bryant. Mr. Leonard is a longtime IEEE member and volunteer, having first joined the IEEE as a student member in 1960. For more than 15 years, Mr. Leonard has played an active role in IEEE Professional Activities at the Section, Region and National levels. He lives in St. Charles, Mo., where he is responsible for Boeing's aircraft integration of the U. S. Navy air-to-surface Harpoon and Standoff Land Attack Missile (SLAM) into U.S. Navy, U.S Air Force and foreign aircraft.

The IEEE's U.S. members also selected Leann A. Kostek to serve as IEEE-USA Member-at-Large, 2002-2003, filling the post previously held by Mr. Leonard. Ms. Kostek is also an active volunteer with the IEEE, currently serving as Region 6 Awards and Recognition Chair. Ms. Kostek is a Senior District Engineer with Puget Sound Energy in Seattle, Wash., where she currently resides.

Congratulations to our new officers and good luck!

For more information, and complete results of the 2001 IEEE annual election, please visit:

<http://www.ieee.org/organizations/corporate/candidates.htm>

Please note that the results of the 2001 IEEE annual election, as tallied by the IEEE Tellers Committee on 7 November 2001, are unofficial until the IEEE Board of Directors accepts the Report of the IEEE Tellers Committee at its meeting of November 18, 2001. In 2001, there were no Constitutional Amendments. The number of ballots mailed was 249,374. The number of valid ballots returned was 49,378. The rate of return was 19.80 percent.

IEEE POWER SYSTEM FUNDAMENTALS CD-ROM SET AVAILABLE

November 7, 2001. PISCATAWAY, NJ. Here's your chance to have Power System Fundamentals at your fingertips. Dr Bruce F. Wollenberg, Director of Graduate Studies at University of Minnesota (UM) & Director of the UM Center for Electric Energy, designed and delivered this three and half hour course at the 2001 IEEE Power Engineering Society Summer Meeting in Vancouver, BC, Canada in July.

The IEEE Educational Activities Board production of Power System Fundamentals is now available. For those working in the electric power industry, this two CD-ROM set provides an opportunity to learn or review some of the basics of power system engineering. For those who possess a general engineering background and supervise engineers, it can provide some familiarity with power system engineering terms. It teaches the basics of AC Power Systems, but avoids the use of deep mathematics. Think of it as "Power Systems 101."

Topics include three phase circuits, symmetrical components and sequence networks, power transformers, the per unit system and power flow, symmetrical and unsymmetrical faults, system protection, automatic generation control, and power system transient stability.

Dr. Wollenberg is an IEEE Fellow and is a contributor to IEEE Transactions on Power Systems. "The Power System Fundamentals tutorial was conducted to introduce someone who wasn't a power specialist to understand,

in a basic way, how power systems work," said Dr. Wollenberg. "Using this, non-power systems people can 'fill in the gaps' in their understanding."

The CD-ROM set has accompanying onscreen transcript, video presentation synchronized with the power point slides, and an outline for ease of jumping to topics. The transcript provides reinforcement for learning and adds extra support for users with non-English as their primary language. In addition the slides are produced in PDF format for easy printouts.

To order use IEEE number EC 142 for the 2 CD-ROM set, \$250.00 member; \$300.00 non-member.

Software Requirements: Windows 95, 98, NT or 2000; Internet Explorer 4.0 (or higher), or Netscape Navigator 4.0 (or higher); Windows Media Player 6.1 (or higher), or RealPlayer G2, version 6.0.5.27 (or higher). Hardware Requirements: Pentium 200 MHz processor; 32 MB RAM; Windows compatible sound card; 4x CD-ROM drive. PC compatible only.

The CD-ROM set can be ordered from the IEEE Customer Service Department, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331, USA; by e-mail: customer-service@ieee.org; by phone: 1.800.678.4333; and on the Web at <http://shop.ieee.org/store/>. For further information on Education Activities check out our Website www.ieee.org/organizations/eab/index.htm.

FREE HOW-TO GUIDE FOR COURSE DESIGN AVAILABLE

Free from the Educational Activities Board (EAB): the Telcordia Technologies' Reference Guide for Instructional Design and Development. This on-line only, 'how-to' guide teaches efficient and effective course and tutorial design. Add educational value to your tutorials and courses, which can qualify them for Continuing Education Units.

Based on the Systematic Design of Instruction, by Walter Dick and Lou Chaney, the guide outlines six distinct steps to acquire sound principles of design. These clear steps are displayed on colorful, easily navigated webpages. Learn to:

- Assess the needs of the instructional situation
- Analyze the learners
- Write learning objectives
- Select an instructional strategy that fits your assessment
- Develop materials that enhance your strategy
- Evaluate your work

With each step there is a concise concept outline, tools to aid in the application of the steps, and online references that can add to the material in the outline. Access this guide at <http://www.ieee.org/organizations/eab/tutorials/refguide/mms01.htm>.

PRESIDENT, MEMBER-AT-LARGE ELECTED BY U.S. IEEE MEMBERS

WASHINGTON (November 14, 2001) - Jim V. Leonard has been elected 2003 president of IEEE-USA, and Leann Kostek was selected to serve as a member-at-large on the IEEE-USA Board of Directors for 2002-03.

Leonard, of St. Charles, Mo., will assume the role of president-elect on Jan. 1, 2002. He will work with 2002 President LeEarl Bryant and 2001 President Ned Sauthoff.

"I am honored beyond words to be elected by my fellow U.S. IEEE members," Leonard said. "I have worked for many years on the IEEE-USA Professional Activities Committee with many of these fine people, and we all have a common goal - to improve the professional life of all U.S. IEEE members and enhance the engineering profession."

Leonard, active in IEEE professional activities at the section, region and national levels for more than 15 years, served as a director on the IEEE United States Activities Board (USAB) in 1992-93 and vice-chairman in 1993-94. He was awarded a 1996 USAB Award for Distinguished Contributions to Engineering Professionalism and a 2000 IEEE Millennium Medal.

Leonard is a Technical Fellow for Boeing A&M (Military Aircraft & Missile Systems) in St. Louis. He is responsible for the integration of the air-to-surface Harpoon and Standoff Land Attack Missile into U.S. Navy, Air Force and non-U.S. aircraft.

Elected a Fellow of the St. Louis Academy of Science in 1998, Leonard earned a bachelor's degree in electrical engineering (BSEE) from the University of Akron in 1961. He added an MSEE (Power) from Washington University in St. Louis in 1966 and an MSEE (Digital) from the University of Missouri at Rolla in 1976.

Leann Kostek serves as the IEEE Region 6 awards and recognition chair, and has been active in the IEEE since her days at Northeastern University, from which she graduated cum laude with a BSEE degree in 1987. She lives in Seattle and works for Puget Sound Energy as a senior district engineer providing technical support to the Operate and Restore Division.

VOICES OF INNOVATION TO PROMOTE ENGINEERING AWARENESS

WASHINGTON (November 21, 2001) - If you are or know of an engineer whose work can help bring a new understanding and awareness of engineering to the public, your story can be told via Voices of Innovation.

Developed by the American Association of Engineering Societies, of which IEEE is a founding member, Voices of Innovation will be a daily radio series of 2-minute radio spots featuring engineers talking about their innovations, careers and work. Each day the program will tell how engineering contributes to the overall well-being of society.

Voices of Innovation allows engineers to tell their own stories and speak with personal passion about their professions and how engineering affects everyday life. A pre-launch demo CD has been produced featuring engineers talking about artificial hands, earthquake engineering and the world's fastest plane.

Voices of Innovation is slated to begin on April 1, 2002 and run through March 31, 2003. It is made possible by a generous grant from the United Engineering Foundation and is being produced by Jim Metzner, the radio personality behind the widely successful program Pulse of the Planet. Several major-market radio stations have expressed interest in carrying the series.

For more information on this exciting new concept and to submit your story idea, go to <http://www.voicesofinnovation.org>. You may also contact David Gately, AAES director, communications and public awareness, at 1-202-296-2297 or dgately@aaes.org.

FIRST WOMAN PRESIDENT OF IEEE-USA POISED TO TAKE OFFICE

WASHINGTON (November 29, 2001) - LeEarl Bryant will make history on Jan. 1, 2002 when she becomes the first woman president of IEEE-USA.

Bryant, a licensed professional engineer from Richardson, Texas, served as president-elect in 2001. She succeeds Ned Southoff of Princeton, N.J., and will serve for one year.

"I hope to leverage this unique opportunity for the benefit of all engineers and scientists," said Bryant, who details more of her thoughts about becoming president following this release. "This includes the women and minorities who are beginning to more visibly contribute to the creative processes that develop products and services, resulting in a higher quality of life for us all. I learned long ago that women help women the most when we take our profession and careers seriously."

As an IEEE-USA Congressional Fellow in 1993, Bryant served as a legislative assistant to U.S. Rep. Pete Geren of Fort Worth, Texas. She was responsible for issues in telecommunications, competitiveness, technology, health, education and aging.



In 1999, Bryant received an IEEE-USA Citation of Honor for her extensive volunteer service to the Institute. She participates actively in the IEEE Dallas Section and is a principal organizer of the IEEE Consultants' Network of Dallas.

Bryant has been active in the IEEE since her days at Texas Tech University, from which she earned a bachelor's degree in electrical engineering in 1966. She was a pioneer in the development of the Society of Women Engineers Texas section (<http://www.swe.org/SWE/RegionC/history/bios.html>) and in 1988, was elected an SWE Fellow. She added an MSEE degree with a bio-medical option from Southern Methodist University and the University of Texas Southwestern Medical Center in 1968.

Bryant has spent much of her career as a technical manager with an extensive background in the telecommunications, transportation and defense industries. Her company, Texas LAB Consultants, specializes in venture and start-up guidance, project management, strategic and business planning and technical writing, including patent descriptions.

CONGRESSIONAL VISITS DAY 2002 IS 5-6 MARCH

The 7th Annual Science, Engineering and Technology Congressional Visits Day (CVD) is March 5-6 2002, in Washington, D.C. The IEEE's U.S. members are invited to join hundreds of other engineers and scientists in this two-day annual event that brings scientists, engineers, researchers, educators, and technology executives to Washington to raise visibility and support for science, engineering and technology issues. The objective of CVD is to stress the long-

term importance of science and technology to the Nation through meetings with Congressional decision-makers. IEEE-USA has participated in CVD for each of the past six years, sending a contingent of members to the Hill to meet with members of Congress and their staffers. If interested in joining the team, submit the online registration form at: <http://www.ieeeusa.org/forum/cvd/>

IEEE-USA SPONSORS S&E SCHOLARSHIP FOR VICTIMS OF 9/11 ATTACKS

Families devastated by the events of September 11th will face one less hardship in years to come, thanks in part to the generosity of the science and engineering community. IEEE-USA is proud to join dozens of technical and scientific societies representing more than one million members in sponsoring the Science and Engineering Scholarship Fund. Financially needy dependents of both domestic and foreign victims of the terrorist attacks can rely on the fund to help them pursue science and engineering degrees at U.S. colleges and universities. The endowment is part of the broader Families of Freedom Scholarship Fund, which is benefiting from a campaign led by Bill Clinton and Bob Dole to raise \$100 million through fund-raising events and gifts from corporations, foundations and individuals.

To make a donation or learn about the Fund visit: <http://www.aps.org/sciencefund.html>. Or, for more information, contact Sarah Davis at the American Physical Society: (301)209-3223, davis@aps.org.

IEEE-USA SEEKING APPLICANTS FOR 2003 CONGRESSIONAL FELLOWSHIPS

IEEE-USA works to strengthen the ties between the engineering community and the legislative branch of the federal government by sponsoring fellows for one-year assignments to the staff of a Member of Congress or Congressional Committee. IEEE-USA is currently accepting applications for 2003 Congressional Fellowships. The deadline for applications is February 22, 2002. For details, go to: <http://www.ieeeusa.org/forum/GOVFEL/congfel.html>

"IEEE-USA TODAY'S ENGINEER" WINS SECOND AWARD OF 2001

"IEEE-USA Today's Engineer" is pleased to have won the American Society of Association Executives (ASAE) Gold Circle Award second prize for Print Magazines in the "Associations Over \$2 Million Budget" category (tied with the American Society for Engineering Education's PRISM). The quarterly print publication won for two of its last issues published in 2000. The ASAE Gold Circle Awards are given for excellence and innovation in associations. Judged by our Communications peers, the competition is truly among the most competitive and distinguished in the association industry. Entries are judged on achievement of objectives, comprehensiveness and clarity of content, effectiveness of writing, format and graphic design -- including use of photography and/or illustration. Winning one of the prestigious awards indicates a dedication to excellence, and the achievement of high standards in the publishing division of association management.

NATIONAL ENGINEERS WEEK 2002 IS FEBRUARY 17-23

An array of exciting events and activities are planned for National Engineers Week 2002 (E-Week), February 17-23, many of which are open to the public. Participation in local and national events is just one way of celebrating the countless accomplishments of engineers, and IEEE-USA strongly encourages U.S. IEEE members to get involved. Following are just a few of the major activities planned for E-Week 2002:

"ZOOM INTO ENGINEERING" HOPES TO REACH EVER-YOUNGER AUDIENCE

On October 15 at the National Building Museum in Washington, D.C., E-Week 2002 committee co-chairs, the American Society of Civil Engineers and DuPont, kicked off a new educational "legacy" program entitled "ZOOM Into Engineering." Created in cooperation with ZOOM, the popular daily PBS children's television series and Web site produced by WGBH Boston, the program seeks to reach an ever younger audience, namely six- to twelve-year-olds,

to teach them the principles of engineering through hand-on experiments and other fun activities. For more information, visit: <http://www.eweek.org/2002/Engineers/zoom.shtml>

FUTURE CITY COMPETITION CELEBRATES 10TH ANNIVERSARY

The National Engineers Week Future City Competition moves into its second decade in 2002. Started in 1992 by E-Week co-chairs, IEEE-USA and Chevron, the program has grown far beyond early expectations now reaching 30,000 middle school students across the country. Future City Competition is a hands-on educational program designed to help seventh- and eighth-grade students discover and develop interests in math, science and engineering. This year, the first place winners from each of the 30 regional competitions will be sent to Washington, D.C. to participate in the National Finals during E-Week. For more information, visit: <http://www.futurecity.org>

"A SIGHTSEERS GUIDE TO ENGINEERING" WINS NATIONAL AWARD

"A Sightseers Guide to Engineering" is a unique Web-based travel guide that highlights engineering achievements across the country. Created by last year's E-Week co-chair, the National Society of Professional Engineers (NSPE), the site was selected to receive the top prize ("Trophy") in the American Society of Association Executives (ASAE) Gold Circle awards for World Wide Web Sites. Check out the site at <http://www.engineeringsights.org>

NATIONAL ENGINEERS WEEK FAMILY DAY MOVES TO SATURDAY

National Engineers Week Family Day is a free, fun-filled day for the entire family on Saturday, February 21, at the National Building Museum in Washington, D.C. Various societies will provide hands-on activities and displays, and DuPont, as the principal sponsor of Jeff Gordon's NASCAR Winston Cup racecar, is expected to have one of the four-time point champion's cars on site.

"INTRODUCE A GIRL TO ENGINEERING DAY" BECOMES ANNUAL EVENT

"Introduce a Girl to Engineering Day" premiered during E-Week 2001 and reached more than 1 million girls. The E-Week Committee 2002 is again challenging the engineering community as a whole to build on the success of last year's efforts by introducing girls to engineering through individual outreach efforts. *Introduce a Girl to Engineering Day* is Thursday, February 21. For more information, visit: <http://www.eweek.org/2002/News/Eweek/girlsday.shtml>

E-WEEK KITS NOW AVAILABLE FOR VOLUNTEERS

Volunteers interested in organizing activities for National Engineers Week can now request a free E-Week kit through IEEE-USA or the E-Week Website. The kit offers "50 ways to participate," a planning calendar, an outline of talking points, tips for working with students, and much more. IEEE-USA has a limited supply of kits. To request a kit, contact Chris McManes at c.mcmanes@ieee.org or visit <https://shop.eweek.org/eweek/> and click on 'Promotional Materials.'

GET INVOLVED LOCALLY!

If you haven't already done so, be sure to check with your local IEEE section to see if there are E-Week activities planned in your area. A listing of IEEE region, council and section Web sites can be found at: <http://www.ewh.ieee.org/sections.html>

DEANS TAKE THE LEAD

For the first time ever, university deans of education and their counterparts in engineering from Regions 1-6, 8, and 10 attended a conference specifically designed to bring them together. The National Science Foundation, the United Engineering Foundation, and the IEEE Life Members Committee were the major funders of the IEEE Educational

Activities Board (EAB) Taking the Lead - a Deans Summit on Education for a Technological World was held on October 1-2 in Baltimore, MD, USA.

Nearly fifty pairs of deans began collaborations and made plans to better prepare pre-service teachers in science, mathematics, engineering, and technology. The deans realize that a population that does not understand these subjects can not make informed decisions as citizens, consumers, and workers.

To make a systemic change that has the potential of influencing thousands of students, a team approach is needed. For the Summit, the deans were required to register together, to pre-commit to produce a viable campus action plan with a timetable, and to return periodic follow-up reports to the EAB.

"At the beginning of the conference, deans of engineering were talking with deans of engineering and deans of education were talking primarily with deans of education," said co-chair and Dean of Engineering, University of Nevada - Reno, Ted Batchman. "By the end of the conference, the discussion groups were mixed."

"When my colleague invited me to attend this meeting, I was not clear regarding the purpose," said University of Virginia Dean of Education, David Breneman. "The event itself, however, was most rewarding, as we found numerous ways that we could work together for the benefit of both fields. A very valuable two days!"

Although they came prepared to work hard, there was also time to informally get to know each other during a poster session, which included representatives from NASA and ITEA, and during a non-working cocktail and dinner.

Panels and Breakout Groups

Speakers and panel sessions prepared the deans to work in small breakout groups. The three panels focused on describing already successful pre-college level outreach efforts, collaborations, and funding strategies. Describing what worked and didn't work, the panelists had the deans laughing with surprise and recognition. Tufts University Dean of Engineering Ioannis Miaoulis confided to the group regarding Outreach, "Having to teach fifth graders has helped me to be a better teacher."

Steering committee member Dean of Engineering at Denver University Albert Rosa said, "The meeting really opened my eyes on how we could work together on future projects. I never really thought about the various stakeholders (Engineers, Educators, School Boards, School Districts, parents, unions, politicians, and students)."

The groups met after each of the three panels and had no trouble generating a multitude of ideas on how to overcome the common impediments of lack of time, too little money, and inertia. After the last breakout group, each pair customized their campus action plan in accordance with their region and academic culture.

"I know the schools of education can help us with our assessment and teaching skills," said Rosa, "and we could help teachers understand what skills and knowledge sets are needed to permit students to enter careers in science and engineering."

As well as preparing the deans to finalize a plan, the breakout groups identified major themes for future work. They range from holding a major conference on engineering and education to promoting joint development of a general education class in engineering.

Walter Gmelch, Dean of Education at Iowa State University and co-chair of the Summit, reported, "At an Education Deans' meeting in San Diego, the buzz was still going on by the deans who attended the IEEE event -- those that couldn't were jealously awaiting a chance to do the same!"

Panel presentations, a list of major themes, and the summary are posted at <http://www.ieee.org/organizations/eab/precollege/deansummit/index.htm>. The proceedings will be available online by the end of the year. For further information on the Deans Summit contact Douglas Gorham, Pre-College Manager, at d.g.gorham@ieee.org.

GAUGE YOUR WORTH WITH THE NEW IEEE-USA SALARY CALCULATOR

WASHINGTON (December 6, 2001) - The IEEE-USA Salary Calculator for technical professionals is now available online at <http://www.ieeeusa.org/careers/salarycalculator>.

Easy to use, this online salary comparison system allows you to find out instantly what you're worth in today's job market. By factoring in more than 70 variables, including industry, experience, education and geographic location, it is the most precise salary calculator in existence. Results include a range of values, in addition to the median.

The IEEE-USA Salary Calculator can help you:

- Estimate a raise request for your annual salary review.
- Evaluate the effects of prospective career changes on your market value.
- Negotiate an initial offer for a new job.

The salary calculator, which is updated monthly with consumer price index adjustments, is based on the precise formulas and solid data of the IEEE-USA Salary & Fringe Benefit Survey, 2001 Edition, the nation's pre-eminent salary survey.

This year's scientific survey was conducted online for the first time, resulting in a near doubling of respondents to more than 9,500. As the biggest and most accurate measure of member compensation conducted by IEEE-USA, the report provides many details not reported in the past. These measurements are incorporated into the salary calculator and are part of IEEE-USA's ongoing quest to provide useful, low-cost products and services to IEEE members.

The IEEE-USA Salary Calculator replaces Salary Benchmarks: A Personal Workbook. The list price is US\$19.95 for a 12-month subscription or US\$9.95 for IEEE members.

The IEEE-USA Salary & Fringe Benefit Survey, 2001 Edition can be ordered by IEEE members for US\$74.95 or non-members for US\$149.95. To order, call 1-800-678-IEEE (4333) and ask for product number UH-2990; or go to <http://www.ieeeusa.org/catalog/01salary.html> for more information and to order online.

ASIAN AMERICANS IN HIGH TECH HAVE HIGHEST INCOMES, IEEE-USA SALARY SURVEY REVEALS

WASHINGTON (December 21, 2001) - Asian American U.S. IEEE members working as electrotechnology and information-technology professionals have the highest median incomes, the IEEE-USA Salary & Fringe Benefit Survey, 2001 Edition reveals.

The survey shows that Asian-American IEEE members had a median primary income of \$99,000. Non-Hispanic whites were at \$93,000, while those from "other" backgrounds - usually persons from India, Pakistan or the Middle East - had medians of \$92,100. Asian Americans includes Pacific Islanders.

Hispanic members reported a median of \$86,500, and non-Hispanic African Americans made \$86,340.

With more than 9,500 respondents, the survey revealed a median primary income of \$93,100 for all U.S. IEEE members in 2000. Primary sources of income include base salary, bonuses, commissions and self-employment income.

E-WEEK 2002 KITS NOW AVAILABLE

WASHINGTON (December 28, 2001) - National Engineers Week 2002 is February 17-23 and now's the time to request your free E-Week kit from IEEE-USA or the E-Week Website.

The kit features information on the exciting new E-Week program, ZOOM Into Engineering. Based on ZOOM, the popular PBS series, ZOOM Into Engineering pairs fun activities for 6-12 year olds with opportunities to interact with engineers.

The kit also includes "50 Ways You Can Participate" in E-Week, a planning calendar, talking points, E-Week poster, tips for working with students and a product catalog and order form.

To request your kit, contact Rita Hamilton at 202-785-0017, ext. 8354 or r.m.hamilton@ieee.org. You can also get one by visiting <https://shop.eweek.org/eweek/> and clicking "Promotional Materials."

EXPERIENCED WOMEN IN HIGH TECH HAVE HIGHER INCOMES THAN MEN, IEEE-USA SALARY SURVEY REVEALS

WASHINGTON (December 28, 2001) - Professional women with 20 to 29 years experience in electrotechnology and information-technology fields have higher median incomes than like-experienced men, the IEEE-USA Salary & Fringe Benefit Survey, 2001 Edition reveals.

Women with 20 to 24 years experience earned \$100,037 per year from primary sources, while men made \$98,500. Women with 25 to 29 years received \$107,000, men \$99,600.

At lower experience levels, however, men earned more than women. For example, for those with 5 to 6 years, men made a median income of \$76,000, compared to \$68,000 for women. Men received \$96,000 at 15 to 19 years, while women earned \$84,700.

With more than 9,500 respondents, the survey revealed a median primary income of \$93,100 for all U.S. IEEE members in 2000. Primary sources of income include base salary, bonuses, commissions and self-employment income. Women make up 6.8 percent of the U.S. membership.

A regression analysis to determine the net contribution of many factors on primary income reveals that, on the whole, women U.S. IEEE members are paid 7.3 percent less than men. This is probably a more reliable indicator of distinction in member income.

President's Column, January 2002 LeEarl Bryant, 2002 IEEE-USA President

Let's Make a Difference During National Engineers Week

By the time you read this, a new year has started with all of our hopes and possibilities for better times. With that in mind, I encourage and challenge you to find ways for increasing the public's awareness of the need for sound math and science education and how engineers use these tools for the betterment of our daily lives, as well as the security and

economic soundness of our nation. The easiest and most rewarding way to accomplish this is to volunteer to assist our local schools, students and parents in better understanding how technology is born from math and science, and how these subjects don't have to be boring or hard to understand.

January is a great month for preparing to make a difference during National Engineers Week 2002, February 17-23. Thanks to your E-Week coalition, new tools have been prepared to assist in your volunteer efforts, including a free E-Week kit with a host of ideas on how you can promote your profession. To receive your kit directly from IEEE-USA, contact Rita Hamilton at r.m.hamilton@ieee.org.

In conjunction with E-Week 2002 sponsors, the American Society of Civil Engineers and the Dupont Corporation, E-Week 2002 is launching a new outreach program for grade levels K-6. This program, ZOOM Into Engineering, was created by WGBH public television station of Boston from selected episodes of the popular ZOOM daily television series and Web site (www.pbskids.org/zoom) that challenges youngsters 6-12 to explore, experiment and share their creativity.

Unlike other E-Week activities for precollege students, ZOOM Into Engineering can be a single activity or a multitude of activities and can be conducted within several environments, including individual classrooms, malls, parks and museums. Thus, one engineer volunteer or a group of us can implement ZOOM Into Engineering.

In preparation for the launch, more than 100 engineers and educators from approximately 34 cities - including me - were trained for implementing the program last October in Washington. Check out www.eweek.org to find if your locality has a trained facilitator. If so, contact this person to find out how to participate in the local training program and any upcoming events. If your area isn't listed, you can order a ZOOM Into Engineering toolkit (www.eweek.org/2002/Engineers/zoomB.shtml), which will provide a training manual, support materials such as a CD ROM and video, and balloons and pencils to hand out as goodies for your first students. The toolkit can be ordered online at www.eweek.org/2002/Engineers/zoom_order.shtml or by calling 412-741-1393.

After reviewing the materials, recruit others to help out and you're on your way. While you're considering the need and possibilities for this and other precollege volunteer needs, remember that U.S. IEEE members and societies only benefit from our E-Week investment when we bring these educational programs to life in our local areas. Please accept the challenge and help improve society's understanding of math, science and technology and you - engineers who bring products and services to life.

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